

Date: Sun, 27 Jun 93 04:30:19 PDT  
From: Ham-Policy Mailing List and Newsgroup <ham-policy@ucsd.edu>  
Errors-To: Ham-Policy-Errors@UCSD.Edu  
Reply-To: Ham-Policy@UCSD.Edu  
Precedence: Bulk  
Subject: Ham-Policy Digest V93 #207  
To: Ham-Policy

Ham-Policy Digest                      Sun, 27 Jun 93                      Volume 93 : Issue    207

Today's Topics:

Send Replies or notes for publication to: <Ham-Policy@UCSD.Edu>  
Send subscription requests to: <Ham-Policy-REQUEST@UCSD.Edu>  
Problems you can't solve otherwise to brian@ucsd.edu.

Archives of past issues of the Ham-Policy Digest are available  
(by FTP only) from UCSD.Edu in directory "mailarchives/ham-policy".

We trust that readers are intelligent enough to realize that all text  
herein consists of personal comments and does not represent the official  
policies or positions of any party. Your mileage may vary. So there.  
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Date: Sat, 26 Jun 1993 23:01:26 GMT  
From: usc!wupost!csus.edu!netcom.com!stevew@network.UCSD.EDU  
To: ham-policy@ucsd.edu

References <204so8\$dn0@news.acns.nwu.edu>, <C90suq.18z@cbnewsk.cb.att.com>,  
<C956Gz.2r@cbnewsk.cb.att.com>"  
Subject : Re: First Amendment and NQ0I was Re: Childish posts on the NQ01 case:

In article <C956Gz.2r@cbnewsk.cb.att.com>, n8afd@cbnewsk.cb.att.com  
(carl.h.bohman..jr) writes:

> Ok, lets say that I am a developer and I am going to develop  
> a model community that reflects the cross section of Americans.  
> I have the standard CCRs about antenna and stuff and I now add  
> a section that says only 80% of the home buyers can be white,  
> 12% of the home buyers have to be black, 7% of the home buyers  
> have to be hispanic and 1% have to be of other ethnic backgrounds.  
> How long would that contract stand in a court of law, after all  
> all parties willingly signed the contract. What makes ham any  
> different with respect to their rights?

I'm going to attempt to draw a parallel between this quetion and  
one of the points I read in the decision made by the court concerning  
Howard vs. Burlingame. If I remember correctly the court had to apply

a series of tests to determine whether Howard was entitled to compensation for his legal fees. One of these tests was to determine whether by gaining an amateur license the Congress via FCC had granted any rights. They said nope. The government grants us permission in the way of privileges with our licenses, not rights, consequently claims failed this particular test. The court specifically found that there was no intent by Congress to grant amateurs any rights beyond those any citizen enjoys when it created FCC if I'm reading the decision right.

Hope that answers the query.

Steve KA6S

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Date: Sun, 27 Jun 1993 05:47:47 GMT  
From: usc!howland.reston.ans.net!gatech!emory!rsiatl!ke4zv!gary@network.UCSD.EDU  
To: ham-policy@ucsd.edu

References <1993Jun20.230931.20746@leland.Stanford.EDU>,  
<1993Jun23.162055.2549@ke4zv.uucp>, <1993Jun24.181224.14042@leland.Stanford.EDU>  
Reply-To : gary@ke4zv.UUCP (Gary Coffman)  
Subject : Re: NQ0I Case : HF Vertical Antennas

In article <1993Jun24.181224.14042@leland.Stanford.EDU> paulf@umunhum.stanford.edu (Paul Flaherty) writes:

>In article <1993Jun23.162055.2549@ke4zv.uucp> gary@ke4zv.UUCP (Gary Coffman) writes:

>>Not necessarily. Many zoning ordinances don't require special setbacks  
>>for \*self supporting\* structures. The normal 5 foot setback from the  
>>property line required for other auxillary structures is sufficient.  
>

>That may be true, but just because it's legal doesn't mean it's a good idea.  
>Especially since, in the original post, the setback of the tower from the  
>house was stated as about half the tower height. Now, if the tower was right  
>next to the house, or 61' away, that would be all right. But 30' away means  
>that if the wind convinces your tower to crash in the direction of your  
>house, it will have performed most of the potential -> kinetic transformation  
>by the time your 7 element beam enters the attic. Beams atop towers are  
>top heavy entities, and do lots of damage where they hit; in a suburban  
>neighborhood, chances are there's something valuable in the 30-60' radius  
>around your tower.

Having some experience with falling towers, ice loaded 1000 footers, I can say that they generally don't fall like trees. They buckle and fall in a heap around the base. That's not always true with small towers, of course, but small towers don't weigh nearly as much as a tree and don't do as much damage when they fall. A well engineered tower should be as

strong as any other structure of the same height, however, so if buildings aren't blown down, the wind shouldn't blow down the tower either. I know it's a cliché that an antenna that stays up all winter is too small, but that's really just an example of bad engineering.

>>???? This is a hard problem even for commercial broadcast arrays operating in open fields over massive fields of ground radials. If you find it easy to get the proper base impedance at each tower, there's probably something wrong with your antenna system. :-)

>

>Yes, but to them, anything but a perfect match is potentially hazardous, since, with 100Kw going out, a 0.01 reflection coefficient means dissipating 1Kw somewhere. Also, dipoles are much easier to match, but a full dipole at AM BCB wavelengths is asking for trouble mechanically.

Well, reflections will dissipate at the antenna after being re-reflected by the feed network so it isn't a question of what to do with the power. The problem is that mismatches change the relative phases and base currents in the individual elements. This skews the pattern from the desired value. At one 5 tower directional station where I worked, one of the towers had a design value of -205 watts at the base. It absorbed power that was then re-radiated by the other towers. Keeping a big array tuned to design values is a constant hassle. As soil conductivity changes over the course of a year, all the tower base networks have to be retuned again and again. And if there is new construction nearby, the array often has to be recalculated to maintain the desired pattern. Most broadcast elements are 5/8 wave rather than 1/4 wave, so it's not so much a question of the ground mirror as it is of a conductive sheet in the near field.

>>You've just doubled the height of your "low profile" antennas. Sleeve dipoles aren't supposed to be unbalanced radiators, they just usually wind up that way. I doubt that a solid sleeve will present less windload for its strength than an open lattice tower.

>

>Well, first of all, four poles at 35' separated by 7 - 15' are going to be one heck of a lot less of an eyesore. Secondly, since they aren't bearing the heavy windload of a beam, their cross sectional area is much less (not to mention the lack of cross members, which greatly increase wind area) and as you know, drag decreases with area. Moreover, they don't have to stay precisely rigid.

Well bending resistance is a function of cross sectional area, and an open lattice structure presents less wind resistance than a solid tube. So for equal strength, a tower suffers less wind loading than a solid element. Such tiny arrays are outside my experience, however. I haven't often worked with array elements shorter than 205 feet, or at such short tower to tower spacings. I assume you're describing a 20 meter array of sleeve dipoles. Your center of radiation is only 15 feet

above ground in that case and near field objects, including ground, are going to play hell with the pattern as well as absorbing large amounts of power. I wouldn't think such an array could be made very efficient, or to have a very clean pattern. A 3 element beam at 66 feet would certainly do better. I'd also think a single self supporting tower would be less of an eyesore than an aluminum forest festooned with a spiderweb of rope guys. Big antennas look smaller when they're high up. My tower is nearly invisible until you are in my yard due to the pine forest permeating the neighborhood.

Gary

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Gary Coffman KE4ZV		You make it,		gatech!wa4mei!ke4zv!gary
Destructive Testing Systems		we break it.		uunet!rsiatl!ke4zv!gary
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End of Ham-Policy Digest V93 #207

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